

## **Remarks**

Claims 1-26 are pending. Please amend claims 1, 12 and 19 as shown on the attached claims listing. Support for the amendment to claims 1, 12 and 19 may be found in the application specification at page 6, lines 12 – 27 and FIGS. 3 and 4, for example. No new matter has been added.

Pursuant to 37 C.F.R. § 1.114, reconsideration of the present application in view of the foregoing amendments and following remarks is respectfully requested.

### **Regarding Examiner's rejections**

#### **3. Rejection for obviousness by Kallner in view of Bradshaw et al.**

By way of the Office Action mailed November 30, 2005, claims 1-5, 8-14, 17-21, and 23-26, stand rejected under 35 U.S.C. § 103 as allegedly being obvious to one of ordinary skill in the art at the time the invention was made and thus unpatentable over U.S. Patent No. 5,791,125 to Kallner (hereinafter referred to as Kallner) in view of U.S. Patent No. 6,358,356 to Bradshaw et al. (hereinafter referred to as Bradshaw). This rejection is respectfully **traversed** to the extent that it may apply to the present claims.

Kallner teaches a rotary heat sealer useable for thermally sealing overlapping film layers wrapped about a load (column 3, lines 21-23). The rotary heat sealer includes heat sealing disks rotatably supported on a rotatable shaft (column 3, lines 25-27). The heat sealing disks are resiliently coupled to the rotatable shaft so that the heat sealing disks are movable transversely relative to the axial dimension of the rotatable shaft (column 3, lines 33-37) to assure complete and permanent welding of overlapping films layers about the load (column 6, lines 19-26).

The heat sealing disks (100) of Kallner are support rings (130) with heating elements (120) that are disposed on the outer peripheral surface (136) about the circumference of the support ring (130) (see FIG. 3 and column 3, lines 40 – 65 of Kallner). As can be seen in FIG. 3, and as described in column 4, lines 18 – 40, the support rings are substantially hollow to accommodate the spring members (140) that allow the support ring to be resiliently mounted to the rotatable shaft 20 in such a way that allows the heat sealing disk / support ring to move transversely relative to the shaft axis. In use, the heating elements (120) located on the outermost periphery of the support ring (130) are heated by an electrical current and are put in direct contact with the film layers to be sealed about a wrapped load (column 3, line 28 – column 4, line 17; FIG. 1; and FIG. 3 of Kallner).

In contrast to Kallner, the present invention uses a heat sealing disk having (progressing outwardly on a radius from the center of the disk) an inner portion, an outer portion and an outer peripheral surface (see FIGS. 2, 3 & 4). Further, the heat sealing disk of the present invention is thermally conductive (page 5, line 34 – page 6, line 1). Additionally, a heating element is present axially adjacent to the inner portion of the heat sealing disk (page 6, lines 12 – 27; FIGS. 3 and 4).

In use, the heating element is heated with an electrical current and the heat of the heating element is axially transmitted to the inner portion of the heat sealing disk. The heat is then conducted radially from the inner portion of the heat sealing disk into the outer portion of the disk and finally into the outer peripheral surface of the disk. The heated outer peripheral surface comes in contact with the material roll when the heat sealing disk engages the material roll to weld the trailing sheet tail of the roll material to the underlying layer of sheet material on the roll (page 7, lines 3 – 12; page 8, lines 27 – 32).

By heating the inner portion of the disk and relying on heat conduction to transmit that heat to the outer portion of the disk and the outer peripheral surface, the entire disk is heated and stores heat energy along the disk radius. Such heating of the entire heat sealing disk allows the disk to store sufficient heat energy to sustain continuous heat sealing of the trailing tails of material rolls in a continuous production process at continuous production speeds (page 8, lines 27 – 32).

As the Office Action points out, Kallner does not teach the heating element heating an inner portion of the heat sealing disk or thermal conduction radially from the inner portion of the disk toward an outer portion and toward an outer peripheral surface. More specifically, Kallner does not teach a heating element axially adjacent to the heat sealing disk or thermal conduction axially to the heat sealing disk and then radially from the inner portion of the disk toward an outer portion and toward an outer peripheral surface.

Bradshaw does not remedy the deficiencies of Kallner as Bradshaw also fails to disclose a heating element axially adjacent to the heat sealing disk that heats an inner portion of a heat sealing disk. Instead, Bradshaw teaches a heated wheel assembly made up of an annular heater (8) ring that fits inside of the cylindrical rim (2) and an insulating casting (20) within the heater (8) ring. The insulating casting, the heater ring and the rim all fit together concentrically to form a single heated wheel. (see col. 3, line 50 – col. 4, line 10; FIG. 8). As such, Bradshaw fails to disclose a heating element axially adjacent to the heat sealing disk.

As Kallner in view of Bradshaw does not teach or suggest all of the limitations of independent claims 1, 12 or 19, a *prima facie* case obviousness has not been met with regard to claims 1, 12, or 19, nor for the claims depending therefrom.

Additionally, there is a lack of motivation to combine Kallner with Bradshaw. Bradshaw teaches a method and an apparatus for applying **a tape** with a thermally activatable or pressure sensitive adhesive impregnated therein to the surface of a substrate such as wood veneer or decorative wood surfacing material (column 2, lines 27-32). The method and apparatus are directed toward solving the problem of generating unwanted globs of glue on the substrate and the surrounding area (column 2, lines 65-67). Kallner does not teach the use or application of adhesive impregnated tapes. Therefore, one of ordinary skill in the art working with the subject matter taught by Kallner would not reasonably be expected or motivated to look to references directed to the problems associated with the application of adhesive impregnated tapes.

It is noted that the Office Action suggests that the heated wheel of Bradshaw and the rotary sealing device of Kallner are functionally equivalent as both are rotary sealing rollers with a heated peripheral region moving along the materials to be sealed. Applicants respectfully disagree. The heated wheel of Bradshaw is designed for the application of an adhesive impregnated tape to a substrate, while the heat sealing disk of Kallner is designed to heat-seal plastic sheets together. Bradshaw is not a heat sealing device; it is an device that is directed to application of a tape and happens to be heated. Kallner is not concerned with application of a plastic wrapping material to a load; it is directed to heat-sealing a layer of plastic wrap to an underlying layer of the same plastic wrap.

The inventions of Kallner and Bradshaw have uniquely different designs, because they have uniquely different desired functions. One of ordinary skill in the art would not be motivated to combine these references, as one looking to heat-seal a material to itself would not look to art related to application of an adhesive tape. Because one of ordinary skill in the art would lack the motivation to combine the cited references, Applicants respectfully request that a *prima facie* case for obviousness has not been established.

At least for the reasons given above, the Applicants respectfully submit that the *prima facie* case of obviousness has not been established. Accordingly, the obviousness rejection of claims 1, 12, and 19 under 35 U.S.C. §103(a), and the claims that depend therefrom, is not warranted and should be withdrawn.

## **2. Rejection for obviousness by Kallner in view of Bradshaw et al. and Herrington**

By way of the Office Action mailed November 30, 2005, claims 6 - 7, 15 - 16, and 22 stand rejected under 35 U.S.C. § 103 as allegedly being obvious to one of ordinary skill in the art at the time the invention was made and thus unpatentable over Kallner in view of Bradshaw et al. as

applied to claims 1, 12, and 19 and further in view of U.S. Patent No. 4,717,372 to Herrington (hereinafter referred to as Herrington). This rejection is respectfully **traversed** to the extent that it may apply to the present claims.

As described above, Kallner in view of Bradshaw does not disclose all the limitations of independent claims 1, 12, and 19, upon which claims 6 – 7, 15 – 16, and 22 depend. Herrington does not remedy the deficiencies of Kallner as Herrington also fails to disclose a heating element axially adjacent to the heat sealing disk that heats an inner portion of a heat sealing disk. Because Kallner does not teach or suggest all of the limitations of independent claims 1, 12, or 19, a *prima facie* case obviousness has not been met with regard to claims depending therefrom.

Additionally, there is a lack of motivation to combine Kallner with Herrington. Herrington teaches an apparatus for producing an **intermittent** heat seal in a moving web of thermoplastic film (column 2, lines 41-44). The intermittent heat seal is provided by movement of the web between a heated support means and a plurality of wheels having heat conducting surfaces spaced around the periphery of the wheels (column 2, lines 44-61). Conversely, Kallner teaches a rotary heat sealer with heat sealing disks that are movable transversely to compensate for variation in the shape of the load for the specific purpose of assuring **complete and permanent welding** of overlapping films layers (column 6, lines 19-26).

The Office Action suggests that one would be motivated to use the device of Herrington because it is effective at sealing two webs together when a tearable seal is desired for easy opening. However, as stated above, the device of Kallner desires to deliver a **complete and permanent welding** of layers. As such, Kallner would **teach away** from one who desires an easy opening seal.

Because one of ordinary skill in the art would lack the motivation to combine the cited references, Applicants respectfully request that a *prima facie* case for obviousness has not been established.

At least for the reasons given above, the Applicants respectfully submit that the *prima facie* case of obviousness has not been established. Accordingly, the obviousness rejection of claims 6 - 7, 15 - 16, and 22 under 35 U.S.C. §103(a) is not warranted and should be withdrawn.

The Examiner is encouraged to call the undersigned at his convenience to resolve any remaining issues.

The undersigned may be reached at: 770-587-8640.

Respectfully submitted,

DAVIS ET AL.

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#### CERTIFICATE OF TRANSMISSION

I, Nathan P. Hendon, hereby certify that on May 1, 2006 the aforementioned documents are being transmitted to the United States Patent and Trademark Office via electronic submission to the USPTO's Patent Electronic Filing System EFS-Web.

By: /Nathan P. Hendon/

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